

Staff accepted the Company's five-year write off. (TR. Vol. 5, p. 92). Mr. Stimart testified that this Commission has tended to amortize items of this nature over varying periods of time depending on the magnitude of the dollars to be amortized. (TR. Vol. 4, p. 44).

The Commission finds that the accounting treatment previously approved by the Commission should be continued. Based on the magnitude of the dollars to be amortized, the Commission is of the opinion the abandonment costs do not warrant the lengthy deferral recommended by the Consumer Advocate and that the five-year amortization is appropriate in this instance. Therefore, the Commission accepts the five-year amortization of the Coley Creek abandonment costs.

Q. — STORM-DAMAGE COSTS

The Commission approved deferred accounting of storm damage costs incurred in 1989 with a five-year amortization period. The Company experienced two major storms in 1989, the first was a tornado in May and the second was Hurricane Hugo in September. The Company requested and the Commission granted it permission to defer the abnormal costs associated with these storms and to amortize these deferred costs over a five-year period. The amortization began in January, 1990, so the test year reflects a full year's amortization. (TR. Vol. 5, p. 50). Consumer Advocate witness Miller proposed to adjust the annual amortization of deferred storm damage costs by removing 10.2% of the amortization because the deferred costs includes certain labor and associated benefits that

Mr. Miller alleges were already included in base rates. (TR. Vol. 5, pp. 50-51).

The Commission notes that witness Miller incorrectly calculated his adjustment to remove a certain amount of labor by using a jurisdictional allocation factor. The Company's cost of service for South Carolina retail includes storm damage amortization expense on a direct charge basis. Witness Miller acknowledged on cross-examination by the Company that use of a jurisdictional allocation factor is inappropriate when expenses have been directly assigned. (TR. Vol. 5, p. 64).

Therefore, based on the evidence, the Commission has determined that the Company's treatment of storm damage expenses is appropriate and that no further adjustment need be made to those expenses.

R. INTEREST SYNCHRONIZATION

The Company, the Commission Staff and the Consumer Advocate proposed to adjust income taxes to reflect interest synchronization. All three proposed different adjustments based on different assumptions made by each of the parties concerning such things as the Company's capital structure, embedded cost of debt, annualized interest on customer deposits, etc. Based on the adjustments and capital structure approved herein, the Commission finds that income taxes should be reduced by \$4,339,000 as proposed by the Commission Staff.

8. Duke Power Company's test year total jurisdictional retail electric operating income for return after accounting and pro forma adjustments and prior to the effect of the proposed increase is \$170,951,000. This calculation is based on operating revenues of \$988,044,000, total operating expenses of \$818,569,000, and customer growth of \$1,476,000. See, Hearing Exhibit No. 37, Accounting Exhibit A and A-2.

9. Duke Power Company's original cost rate base allocated to jurisdictional retail electric operations for the test year, after accounting and pro forma adjustments is \$1,835,128,000. This is based on the following adjustments:

A. PLANT IN SERVICE

The Commission finds that all four units of the Bad Creek Hydroelectric Station were in commercial operation prior to the commencement of the hearing. As testified by Mr. Lee, Bad Creek Units 1 and 2 went into commercial operation on May 15, 1991, and were in operation at the time of the record summer peak. Unit 3 began commercial operation on September 3, 1991, and Unit 4 on September 13, 1991.

Mr. Lee testified that the Bad Creek Hydroelectric Station, a four-unit, 1,065 MW facility, was completed ahead of schedule and under budget. In his prefiled testimony, Mr. Lee testified that Bad Creek would be completed under budget at an approximate cost of \$1.1 billion. (TR. Vol. 1, p. 59). Mr. Lee testified that pumped storage offers special dynamic advantages to the Duke system that no other type of capacity can offer. Without Bad Creek, the

projected reserve margin in 1991 would have been well below the minimum reserve margin of 20%. (TR. Vol. 1, p. 60).

In his summary and update of his testimony given on the stand, Mr. Lee stated that Bad Creek Units 1 and 2 went into commercial operation on May 15, 1991, and were in operation at the time of the record summer peak. If these two units had not been on-line, Duke's summer reserve margin would only have been 15%. Unit 3 began commercial operation on September 3, 1991, and Unit 4 on September 13, 1991. Mr. Lee testified that Bad Creek had been completed ahead of schedule and over \$100 million under budget. He stated that the completed cost of Bad Creek compares favorably to other projects completed in the same time frame. In addition, he testified that the capacity from Bad Creek is necessary to meet the ~~growing demand for reliable electricity in the Duke service area~~ and to maintain adequate reserve margins. (TR. Vol. 1, pp. 66-67). Mr. Stimart, in the summary of his direct testimony, testified that the final cost of Bad Creek was approximately \$1,008,000,000. (TR. Vol. 2, p. 165).

Company witness Reinke also testified that Bad Creek Units 1 and 2 were needed to meet the summer 1991 peak and Units 3 and 4 are needed to keep reserves at the minimum levels in 1992. Duke's reserves are projected to be 20.7% in 1992 and 18.3% in 1993. (TR. Vol. 6, p. 94).

Planning for Bad Creek began in the late 1960's when the Company foresaw the need for pumped-storage capacity to complement the nuclear and base load plants that were being planned and built

by the Company. Mr. Reinke testified that pumped-storage projects such as Bad Creek offer benefits over and above the value of the capacity alone. According to the testimony, pumped storage is a benefit to the Duke system because its load shape can accommodate the technology and there is sufficient nuclear and fossil generation to provide low-cost pumping energy for Bad Creek. (TR. Vol. 6, pp. 90-91). With the addition of Bad Creek, the Duke system will be able to operate more reliably and economically because of the complimentary fit of the pumped-storage generation with the rest of Duke's generation. At a final cost of \$1,008,000,000, Bad Creek compares favorably with other units of its type completed in the same time frame. Exhibit (WFR-1), Hearing Exhibit 44, to Mr. Reinke's testimony, which assumes ~~commercial operation in 1992; reflects this favorable comparison~~ which is further enhanced by the fact that all four Bad Creek units were brought into operation ahead of schedule.

Consumer Advocate witness Lanzalotta was the only witness who raised any issues concerning the prudence of Bad Creek. However, the Consumer Advocate made no recommendation in the form of an adjustment or otherwise concerning the inclusion of Bad Creek into the Company's rate base. Mr. Lanzalotta testified that there are indications that Duke has adequate pumped storage without the addition of Bad Creek. He testified further that his belief was based on his Exhibit (PJL-5), Hearing Exhibit 38, which showed that the generation from Duke's other pumped-storage generating station, Jocassee, dropped by about 50% in 1992 and 1993, the first years of

Bad Creek's operation. (TR. Vol. 5, p. 119).

Company witness Reinke testified in response to this point and stated that the projected reduced output from Jocassee in 1992 and 1993 is the result of two of the Jocassee units being scheduled to be out of service for approximately six months in each year for major maintenance work. Mr. Reinke testified further that the addition of Bad Creek would enhance the opportunity to conduct the maintenance at Jocassee in the most economical way. (TR. Vol. 6, pp. 92-93).

Witness Reinke testified that both the Jocassee and Bad Creek units operated above their projected levels of output in 1991. In addition he testified that the pumped-storage generation for the first 19 days of September 1991 exceeded the total generation for Jocassee in September 1990. (TR. Vol. 6, p. 93). The Commission finds the evidence presented on this point by the Company to be convincing and rejects the position advanced by witness Lanzalotta.

Consumer Advocate witness Lanzalotta also testified that Units 3 and 4 of Bad Creek are not needed to maintain reliable reserves over the three-year period during which Duke expects the rates from this proceeding to be in effect. Mr. Lanzalotta testified that with the addition of Bad Creek Units 3 and 4, Duke's reserves would range from 27.9% to 23.3% during 1991-1993. (TR. Vol. 5, p. 125). This testimony was addressed by Company witness Reinke who showed that Mr. Lanzalotta had erred in the method he used to calculate Duke's reserves. The apparent discrepancy is in how demand-side programming should be treated in calculating reserve margins. Mr.

Reinke testified that the proper method to calculate reserves is to determine the combustion turbine equivalent of demand-side management programs rather than as load, which is how Mr. Lanzalotta made his calculation. Mr. Reinke's testimony sets forth in some detail that where generating capacity is to be deferred or replaced by demand-side programs, it is appropriate to use a generation equivalent model to calculate reserves. Mr. Reinke testified that using this method, Duke's reserves would be 20.7% in 1992 and 18.3% in 1993 after the addition of Units 3 and 4 of Bad Creek. (TR. Vol. 6, pp. 94-96). The Commission is convinced by Duke's evidence and finds that Bad Creek Units 3 and 4 are required to maintain reliable reserves.

Consumer Advocate witness Lanzalotta offered testimony to show ~~that 1,237-MW of combustion turbines would cost less in 1992 than~~ Bad Creek. Mr. Lanzalotta used a bus bar analysis to show that 1,237 MW of CTs would be able to supply the same amount of capacity and energy expected from Bad Creek in 1992 at a total annual cost which is about \$43,000,000 less than Bad Creek is expected to cost. Mr. Lanzalotta's analysis used a 5.8% capacity factor. (TR. Vol. 5, p. 128).

Company witness Reinke testified in rebuttal to this point. Mr. Reinke testified that a bus bar analysis is simply the annual costs, including capital costs, of the plant divided by its annual output. Such an analysis does not take into account the system benefits associated with pumped-storage such as the reduction in spinning reserve requirement and its load following capability.

Mr. Reinke testified further that pumped storage is beneficial to the Duke system because its load shape is such that the pumped-storage generation can be utilized during the day to meet system load, and there are sufficient resources in the form of nuclear and efficient fossil generation to provide low-cost pumping at night and on the weekends. (TR. Vol. 6, pp. 97-98).

Mr. Reinke testified further that Mr. LanzaLotta's use of a 5.8% capacity factor, which does not reflect the impact of the other system benefits of pumped storage in his bus bar analysis, was incorrect. In fact, Bad Creek has operated as high as 33.3% in 1991, and had numerous weeks when the capacity factor has been greater than 15%. Jocassee, Duke's other pumped storage hydroelectric generating station, has operated well in excess of 15% during 1991. A bus bar analysis using a 15% capacity factor rather than a 5.8% capacity factor, would cost \$10 million less annually than combustion turbines. (TR. Vol. 6, p. 98). Similarly, a 27% capacity factor for Bad Creek produces a \$79 million benefit annually over combustion turbines.

The Commission finds that, based on the evidence presented by the Company, Bad Creek provides greater savings to the customer than an equivalent amount of combustion turbines.

Consumer Advocate witness LanzaLotta testified that the cost of Bad Creek was higher than the rates paid to co-generators. (TR. Vol. 5, p. 127). Company witness Reinke testified in response to this point. Mr. Reinke stated that Mr. LanzaLotta's comparison was incorrect because it attempted to compare resources which have

different operating characteristics. Mr. Reinke testified that co-generators and other QF's typically operate around the clock and fluctuate to meet the owner's requirements rather than Duke's system requirements. (TR. Vol. 6, pp. 98-99). Mr. Lanzalotta acknowledged on cross-examination that one of the advantages of Bad Creek is that it will operate when the Company needs it. (TR. Vol. 5, p. 171). The Commission finds that based on the evidence, a cost comparison of Bad Creek with co-generation is inappropriate.

After carefully reviewing all of the evidence presented by the parties, the Commission finds that the construction of Bad Creek was prudent and that it is needed to meet the demand in Duke's service area. The Commission finds further that the costs of constructing the station were prudently incurred and that the ~~selection of hydroelectric pumped-storage generation is prudent~~ compared to other generating alternatives. In addition, the Commission finds that Duke's reserve margins with the Bad Creek units in service will be at levels that are reasonable and necessary for reliable service.

The Consumer Advocate has criticized certain other aspects of Bad Creek. The Commission has reviewed this testimony and exhibits carefully. The remaining criticism, while not specifically addressed, must be rejected by the Commission as not being supported by the facts in evidence.

Initially, the Company in its application sought to include in plant in service \$275,391,000 as an adjustment for Bad Creek. The Commission Staff proposed that plant in service be adjusted by

\$238,765,000, representing three units that were in operation at the time of Staff's audit. Once it became known that all four units of Bad Creek were in commercial operation, the Commission Staff supplemented its testimony and proposed that \$17,640,000 of construction work in progress connected with Bad Creek Unit 4 be included in Gross Plant. That was the amount of dollars associated with the new unit that had been audited by the Commission Staff. Staff further recommended other adjustments in relation to the addition of Unit 4 to plant in service.

The Commission has determined that Staff's adjustment to include a total of \$256,281,000 as an adjustment to plant in service to represent all four units of Bad Creek Hydro Electric Station being in commercial operation is appropriate. That amount has been verified by the Commission Staff and should be adopted and included in rate base. Additionally, the adjustments to depreciation, property taxes, deferred cost and amortization of deferred costs should be readjusted to reflect the new plant balance.

B. ACCUMULATED DEPRECIATION

The Staff and the Company proposed to adjust accumulated depreciation. The Commission has previously determined that the adjustment to electric plant in service for Bad Creek as proposed by the Commission Staff is appropriate. Therefore, the adjustments proposed by the Consumer Advocate and the Company regarding accumulated depreciation associated with their respective proposed levels of investment in Bad Creek are inappropriate. Staff

adjusted accumulated depreciation by the amount of the adjustment to depreciation expense for the Company's proposed depreciation rates. The Commission has previously found the Company's proposed depreciation rates to be appropriate for use in this proceeding. Therefore, Staff's adjustment to accumulated depreciation of \$7,903,000 is appropriate for the purposes of this proceeding. Accumulated depreciation will be adjusted accordingly.

C. WORKING CAPITAL

The Company, the Staff and the Consumer Advocate filed testimony concerning the working capital computation. All three parties computed the cash allowance component by application of the one-eighth formula traditionally used by the Commission. This one-eighth formula was applied to operation and maintenance ~~expenses exclusive of purchased power and nuclear fuel expense~~. This amount is then reduced by the average tax accrued balance. No party contested this component of working capital, the average tax accruals or prepayments. The Commission finds, therefore, that the amounts proposed by the Company, Staff and the Consumer Advocate for operating funds, taxes accrued, and prepayments are appropriate for use in this proceeding. However, the parties did disagree on certain other adjustments to working capital.

Instead of including the required bank balances associated with compensating balance requirements for the lines of credit in banks which require that a compensating balance be maintained in the account or penalty charges will be incurred, for working funds which are required in order to conduct day-to-day operations and

miscellaneous special deposits, the Company has simply included its end-of-period cash balance held in each account. (TR. Vol. 4, pp. 66-69; Hearing Exhibit No. 30). The Commission agrees with the Consumer Advocate's recommendation that the minimum bank balances should be limited to the compensating bank balances that are required in order to eliminate fees and to meet the day-to-day cash requirements, and not on all cash held in the bank at the discretion of the Company. The record shows that of the total company cash held in banks amounting to \$8,209,000, only \$508,500 is required as compensating bank balances. This amount, when added to the working funds of \$2,071,000 and the miscellaneous special deposits of \$111,000 generates a total minimum bank balance of \$2,691,000 and a jurisdictional balance of \$700,000. (Hearing Exhibit 36; Schedule PEM2.2). The Commission hereby adopts the recommendation of the Consumer Advocate and will adjust required bank balances by \$700,000.

The Company has included a total company allowance for a bond reacquisition premium of \$42,237,000. This amounts to \$10,906,000 after allocation to the South Carolina jurisdiction. These amounts, though, relate to both electric and nonelectric operations, with the nonelectric operations amounting to 3.0%. The Company does not dispute the 3.0% portion associated with nonelectric operations. (TR. Vol. 4, pp. 64-66). The Commission is of the opinion that the shareholders are not entitled to earn a return on operations that are not associated with the increase in electric rates and, therefore, we agree with the Consumer Advocate

that the working capital allowance should be reduced by the amount which reflects the portion associated with nonelectric operations. Therefore, the adjustment for bond reacquisition premiums should be in the amount of \$10,579,000 on a South Carolina jurisdictional basis.

The Company has included miscellaneous deferred debits and credits of \$9,844,000 in working capital. Consumer Advocate witness Miller made an adjustment to exclude this component of working capital from rate base. Commission Staff witness Price did not include miscellaneous deferred debits and credits as a per book item of working capital.

In support of his adjustment, Mr. Miller testified that such items are more appropriate for inclusion in a lead-lag study.

Moreover, Mr. Miller noted that deferred debits and credits are not an item that this Commission regularly includes in working capital. (TR. Vol. 5, p. 12).

The Commission has considered the positions of the various parties and finds that no adjustment should be made to miscellaneous deferred debits and credits. In the Commission's opinion, the Company has provided no basis as to why the Commission should include the various items making up miscellaneous deferred debits and credits in working capital. Therefore, the Commission finds that no adjustment should be made to miscellaneous deferred debits and credits and that the Company's proposal is denied.

Consumer Advocate witness Miller testified that unclaimed funds represent amounts which have never been claimed by the

contributors, i.e., a customer deposit which is never returned by the Company could eventually become an unclaimed fund. In addition, since these unclaimed funds are a non-investor source of funds, they should be subtracted from rate base in the same manner that other non-investor sources of funds are subtracted. (TR. Vol. 5, p. 52).

The Commission agrees with the adjustment proposed by the Consumer Advocate. As Mr. Miller indicated in his testimony, this recommendation is consistent with the Commission's previous orders ruling on this matter. Duke Power has presented no reason as to why the Commission should treat unclaimed funds in a different manner. The Company's jurisdictional rate base should be reduced by \$214,000.

~~The Commission Staff proposed to increase rate base by~~ \$15,607,000 relating to Bad Creek deferred costs. This proposal is based on the Staff's recommendation previously adopted by the Commission that the deferred cost be amortized over ten years and that the unamortized balance be included in rate base. (TR. Vol. 5, p. 81). The Commission, having already determined that the Staff recommendation of a ten-year amortization with the unamortized balance included in rate base as being appropriate, finds that Staff's adjustment to increase rate base is appropriate and is adopted for ratemaking purposes herein. Therefore, rate base will be adjusted by \$15,607,000 on a jurisdictional basis.

Commission Staff witness Price has included \$1,841,000 of unamortized Catawba deferred cost in working capital. This

adjustment corresponds to his proposal to reflect the Catawba deferred amortization costs in the cost of service. (TR. Vol. 5, p. 86; Hearing Exhibit No. 37, Accounting Exhibit A-3). Based on the Commission's prior discussion concerning Bad Creek deferred costs, the Commission hereby adopts this adjustment.

D. MISCELLANEOUS ADJUSTMENTS

All other adjustments proposed by Staff and not objected to by any party are hereby adopted. All other adjustments proposed by the various parties not specifically addressed herein have been considered by the Commission and have been denied. General taxes, state income taxes, and federal income taxes will be adjusted to reflect all adjustments approved herein by the Commission.

E. TOTAL RATE BASE

~~The Commission, having determined the appropriate adjustments~~
to the Company's rate base herein sets forth the appropriate balances for the various categories of rate base:

TOTAL RATE BASE

Gross Plant in Service	\$3,384,892,000
Less: Accumulated Depreciation	(\$1,357,607,000)
Net Plant	<u>\$2,027,285,000</u>
Materials and Supplies	\$ 73,668,000
Cash Working Capital	\$ 63,475,000
Plant Held for Future Use	\$ 4,402,000
Construction Work in Progress	\$ -0-
Accumulated Deferred Income Taxes	(\$ 315,569,000)
Operating Reserves	(\$ 14,180,000)
Customer Deposits	(\$ 3,953,000)
TOTAL ORIGINAL COST RATE BASE	<u>\$1,835,128,000</u>

10. The appropriate capital structure for the Company for use in this proceeding is as follows:

<u>ITEM</u>	<u>PERCENT</u>
Long-Term Debt	40.69%
Preferred Stock	9.31%
Common Equity	<u>50.00%</u>
TOTAL	<u>100.00%</u>

(Hearing Exhibit No. 37, Accounting Exhibit A-4).

In its Application, the Company utilized its actual per book capital structure as of December 31, 1990, consisting of 49.82% common equity, 9.68% preferred stock, and 40.50% long term debt. The Consumer Advocate concurred in the capital structure proposed by the Company. However, in keeping with its current practice, the Commission Staff updated the capital structure as of June 30, 1991. (Hearing Exhibit No. 37, Accounting Exhibit A-4).

The Commission finds that it is appropriate to use the updated capital structure of June 30, 1991, as proposed by Staff. This gives the Commission the most updated financial picture of the Company for use in determining rate base and setting rates. The Commission will continue to monitor the capital structure of Duke Power.

11. The testimony and exhibits of Company witnesses Lee, Osborne, and Ibbotson, Commission Staff witness Price, and Consumer Advocate witness Legler presented the Commission testimony concerning the appropriate embedded cost rates for long term debt and preferred stock. The Commission finds that the appropriate

embedded cost rate for long term debt is 8.67% and preferred stock is 7.53%. (Hearing Exhibit No. 37, Accounting Exhibits A-5 and A-6). These reflect an update to June 30, 1991.

Upon review of the evidence, the Commission finds that the embedded cost rates as of June 30, 1991, as proposed by the Commission Staff, which are in accordance with the updated capital structure as of June 30, 1991, are appropriate for use herein.

12. The reasonable range of return on common equity that Duke should be allowed an opportunity to earn is 12.0% to 12.5% which the Commission adopts for this proceeding. The Commission will set rates based on a rate of return at the midpoint of the range of 12.25%. Combined with the debt and preferred cost rates and the capital structure set forth in the table below which the Commission finds reasonable, the overall rate of return is 10.35%:

<u>ITEM</u>	<u>PERCENT</u>	<u>COST</u>	<u>WEIGHTED RATE</u>
Long-Term Debt	40.69%	8.67%	3.53%
Preferred Stock	9.31%	7.53%	.70%
Common Equity	<u>50.00%</u>	12.25%	<u>6.12%</u>
TOTAL	100.00%		10.35%

The evidence for this finding concerning the appropriate return on common equity is found in the testimony and exhibits of Company witness Ibbotson, Commission Staff witness Spearman, and Consumer Advocate witness Legler. A principal issue in any ratemaking determination involves the proper earnings to be allowed on the common equity investment of the regulated utility. In this proceeding, the Commission heard the expert testimony of three

witnesses relating to the fair and reasonable rate of return on common equity for the Company.

This Commission has frequently stated that it adheres to no particular theory or methodology for the determination of a fair rate of return on common equity. (See, e.g., Order No. 85-841, at p. 56). Rather, we perceive our function as that of engaging in a careful and reasoned analysis of the evidence in a practical context. The record of the instant proceeding illustrates the use of several fundamental methods for the determination of the cost of equity capital by the expert witnesses for the Company, the Consumer Advocate, and the Commission Staff. Those methods include the discounted cash flow ("DCF") method, the capital asset pricing model ("CAPM"), the risk premium method, and the comparable earnings approach.

The evidence presented by the witnesses demonstrated an approach to their respective investigations within the parameters of the language of the United States Supreme Court in its decision in Federal Power Commission v. Hope Natural Gas Co., 320 U.S. 591 (1944), at 603:

[T]he return to the equity owner should be commensurate with the return on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital.

While the independent studies of each witness, either implicitly or explicitly, commenced with those standards, the respective methods employed produced quite different results, presenting the

Commission with recommendations ranging from 11.5% to 13.17%. The Commission must weigh the opinions of the expert financial witnesses as to the expectations of investors or the opportunity costs of equity capital in conjunction with the tangible facts of the entire record of the proceeding, including the observable financial condition of the Company. Southern Bell Telephone & Telegraph Co. v. Public Service Commission of South Carolina, 270 S.C. 590, 244 S.E.2d 278 at 282 (1978). In the final analysis, we must determine the credibility and probative value of the testimony of the expert financial witnesses and use our judgment to evaluate this evidence in regard to the cost of common equity.

Furthermore, the Commission cannot determine the fair and reasonable return on common equity for the Company in isolation. Rather, the Commission must carefully consider a variety of relevant factors, including identifiable trends in the market relating to the costs of labor, materials, capital, interest rates and inflation rates; comparisons of past earnings with present earnings and prospective earnings; the prices for which the Company's service must be rendered; the returns of other enterprises and the reasonable opportunities for investment therein; the financial policy and capital structure of the Company and its ability to attract capital; the demonstrable competency and efficiency of the Company's management; the inherent protection against destructive competition afforded the Company through the operation of the regulatory process and the competitive forces that are coming into being have never been experienced before; general

economic conditions; and the public demand for growth and expansion which is required to evaluate the construction program for the foreseeable future. The Commission must strike the balance among these complex and interrelated factors in the context of the record herein.

In its determination of a fair and reasonable rate of return, the Commission maintains the ultimate responsibility of setting the rates to be charged for the utility services provided by the Company. The exercise of that responsibility involves the balancing of the interests of the consumer and the investor. The Commission must gravely balance the interests of the same consumer in regard to the reliability and adequacy of the supply of energy. The Commission has maintained these interests paramount throughout this proceeding. The Commission's determinations of the Company's revenue requirements and of the proper allocation of those revenues within the approved rate structure embodied in this Order reflect fairly and equitably the interests expressed in the record before us.

Duke presented Dr. Roger G. Ibbotson, the Consumer Advocate presented Dr. John B. Leglér, and the Commission Staff presented Dr. James E. Spearman to testify on the rate of return to be applied to Duke's common equity. Dr. Ibbotson's testimony was filed on June 24, 1991, and was prepared in February of 1991 and used data current at that time. Dr. Ibbotson updated his prefiled testimony in September 1991 and used data current at that time to reflect changes in the capital market which had occurred after

preparation of his testimony. Dr. Spearman's testimony was filed on September 9, 1991, and was based on data current as of that date. Dr. Legler's testimony was filed on September 9, 1991, and used data current as of that date. Dr. Legler updated his testimony on September 25, 1991, and used current data as of that date.

A summary of the respective recommended returns on common equity, as updated, is as follows:

<u>PARTY</u>	<u>WITNESS</u>	<u>METHOD</u>	<u>RETURN ON COMMON EQUITY</u>
Company	Dr. Ibbotson	CAPM	13.17%
Staff	Dr. Spearman	CAPM/DCF	12.0% to 12.5%
Consumer Advocate	Dr. Legler	DCF/CAPM	11.5% to 12.5%

The Company's witness, Dr. Ibbotson, recommended in his prefiled testimony, a return on common equity of 13.75%. Prior to the hearing, Dr. Ibbotson updated his recommended return on common equity to 13.17% because of changes in market conditions occurring between the time he prepared his testimony and the time of the hearing. (TR. Vol. 3, p. 35).

Dr. Ibbotson estimated Duke's cost of equity relying exclusively on the CAPM which defines the cost of equity to be equal to the sum of the rate of return on a riskless security plus an equity risk premium, which is an additional return for the risk of holding the particular security (in this case Duke Power's common stock). The risk premium is estimated by multiplying the beta (a measure of risk) of Duke's common stock by the additional return which an investor expects to realize by investing in a diversified market portfolio rather than in the riskless security.

(TR. Vol. 3, p. 12). For the riskless security, Dr. Ibbotson used an average of recent yields on 20-year U.S. Treasury bonds. For his estimate of the expected equity risk premium of the market as a whole, Dr. Ibbotson used 7.1%, which was developed in Ibbotson Associates' Stocks, Bonds, Bills and Inflation 1991 Yearbook, and is the arithmetic average of the differences, or spreads, between the annual total returns on the stock market (represented by the S&P 500), and the average annual income returns on 20-year treasury bonds, over the period 1926 through 1990. (TR. Vol. 3, p. 25). Using a risk-free rate of 8.55%, a beta for Duke of 0.65 and a market risk premium of 7.1%, Dr. Ibbotson concluded that the current required rate of return on equity for Duke Power Company is 13.17%, which includes no allowance for flotation costs. (TR. Vol. 3, pp. 26, 31 & 32).

The Commission Staff's witness, Dr. Spearman, used two independent methods--the CAPM and the DCF--in arriving at his estimates of the cost of capital. Based upon these two methods, he recommended a rate of return on common equity in the range of 12.0% to 12.5%. (TR. Vol. 5, p. 295). In his DCF analysis, Dr. Spearman utilized data for Duke Power Company and the Moody's Electric Utility Index to derive the expected cost of equity. Dr. Spearman's DCF analysis which included several variations resulted in an expected cost of common equity of 10.34% to 12.01%. (TR. Vol. 5, pp. 275).

Dr. Spearman's prefiled testimony indicated a rate of return in the range of 10.59% to 12.50% based on his analysis of the CAPM

method. (TR. Vol. 5, p. 293). Dr. Spearman concluded that because the investor could reasonably expect that market returns in the future will probably be consistent with past performance and the beta will probably be at the upper end of the beta range in this study, his recommendation was in the range of 12.0% to 12.5%. (TR. Vol. 5, p. 295).

The Consumer Advocate's witness, Dr. Legler, primarily used the DCF methodology, but also employed the risk premium, CAPM and comparable earnings methodologies. Based on data for Duke Power Company and a group of double-A rated electric utilities, Dr. Legler arrived at a range of cost of equity capital for Duke Power Company using the DCF method of 10.7% to 12.0% in his updated testimony. Dr. Legler's updated risk premium method produced a rate of return range of 10.5% to 11.5%. His updated CAPM method indicated a range of 10.3% to 12.5%. In his updated testimony, Dr. Legler's range was 11.5% to 12.5%, with his final recommended rate of return on equity capital being 12.00%. (TR. Vol. 6, pp. 48-53).

The Commission has been presented with differing testimony and evidence with respect to the cost of common equity. As that is the case, it is therefore our responsibility to weigh and evaluate such evidence and reach a decision after applying our expertise and reasoned judgment. The Commission observes that there are a number of valid approaches to the cost of equity determination, but that, in the final analysis, the results of all these approaches are influenced by the judgments and assumptions of the witnesses. In this case, judgment plays a critical role, for the disparity

between the recommendations of the witnesses in their use of the DCF method is not attributable to any fundamental difference in methodology, but rather to legitimate differences of opinion as to which data provides the best evidence of the cost of equity. This Commission must ultimately use its own judgment in evaluating the evidence presented by the witnesses.

It therefore becomes the Commission's responsibility to set a fair and reasonable rate of return on common equity from which can be derived the lawful rates for the Company for its South Carolina retail electric operations. This responsibility must be discharged in accordance with statutory and judicial standards, based upon the numerous factors identified herein, and applied in accordance with the informed judgment of the Commission.

In evaluating the evidence presented, the Commission makes note of witness Legler's statement, to wit:

It is my opinion that the application of finance theory can provide help and guidance in the decision process, but that the issue of the fair rate of return is still largely judgmental. This is particularly true with respect to the return on equity component of the overall rate of return. Each finance theory suffers from the necessity of making crucial assumptions requiring judgment in the process of its application. Although proponents of any particular theory tend to minimize or even overlook the importance of the necessary assumptions, often the assumptions that are necessarily made are crucial to their results. (TR. Vol. 6, pp. 3-4).

An examination of Duke's witness Ibbotson's study reveals that he used only one financial model, the Capital Asset Pricing Model, to develop a cost of equity capital recommendation. While this

methodology has long been accepted by this Commission, Dr. Ibbotson used no other analysis or methodology as a "check" of the reasonableness of his risk premium analysis. Besides a lack of a verification of his CAPM conclusion, witness Ibbotson used only one company, Duke Power, in his analysis. Therefore, the Commission is led to determine that the support for his recommendation is incomplete. The better evidence is supplied by Legler and Spearman.

Both witnesses Legler and Spearman used other proxies in addition to Duke, to assist in estimating the cost of equity. In his risk premium analysis, Dr. Legler used a group of double-A rated electrics, and tested his estimated return for Duke against the average estimated return for this set of reasonably comparable companies. He further tested the comparability of Duke's riskiness compared to the riskiness of this group of companies. He used commonly used measures of risk recognized by this Commission in making these tests. For comparative purposes, Dr. Spearman applied both his DCF and CAPM analyses to Moody's Electric Utility Index, comprised of twenty-four companies.

Although this Commission has found the CAPM an acceptable method of estimating the cost of equity, this Commission recognizes that it, like the other methods, suffers from the necessity of making judgments in its application and from basic assumptions which underlie the model. Some of these problems were discussed by Dr. Legler. (TR. Vol. 6, pp. 35-39). Indeed, while Dr. Ibbotson found the cost of equity using this method to be 13.17%, Dr.